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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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WASHINGTON, DC 20005

EXAMINER

ARNOLD, ADAM

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2697

DATE MAILED: 07/07/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,504

Applicant(s)

BOUDIER, PIERRE S.

Examiner

Adam Arnold

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40, 42-61 and 63 is/are rejected.
- 7) ☒ Claim(s) 41 and 62 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-19, 21-37, 39, 40, 42-58, 60, 61 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hopcroft, U.S. Patent No. 6,154,215. Referring to claim 1, Hopcroft discloses a system for optimization of a scene graph (col. 2, lines 56-58), comprising: an optimization base with logic for at least one atomic optimization (see Figure 12, where the diamond shapes represent the atomic optimizations); an optimization registry listing the atomic optimizations (col. 11, lines 5-30) including priority information (col. 11, lines 33-40); an optimization manager for creating, configuring and applying an optimization process (See Figure 12) and an optimization configuration manager for accepting user configuration information (col. 2, lines 32-38). Although Hopcroft does not explicitly disclose listing parameter information associated with the optimization, this can be implied from col. 11, first paragraph beginning on line 5. For example, in step 1202 where nodes are deleted, the parametric information can be the specific node. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to list parameter information associated with an optimization. One of ordinary skill in the art would have been motivated to do this to allow for more control over the optimization process.

Referring to claim 2, Hopcroft discloses a user interface through which a user can provide configuration information to the optimizer (col. 4, lines 55-58).

Referring to claim 3, Hopcroft discloses where the user interface is provided by a modeler which produces the scene graph (col. 2, lines 50-54).

Referring to claim 4, Hopcroft discloses where the user configuration information comprises a selection of an atomic optimization (col. 2, lines 32-38).

Referring to claim 5, the remarks presented above with respect to claims 1 and 4 apply equally to this claim.

Referring to claim 6, Hopcroft discloses where the atomic optimization comprises a collapse geometry (Figures 3A, 3B and 3C, where the geometric blocks have been reduced from 3B to 3C).

Referring to claim 7, Hopcroft discloses where the atomic optimization comprises a collapse hierarchy (col. 11, line 14).

Referring to claim 8, Hopcroft discloses where the atomic optimization comprises a convert image optimization (col. 3, line 66).

Referring to claim 9, Hopcroft discloses where the atomic optimization comprises a convert transform (col. 3, line 63).

Referring to claim 10, Hopcroft discloses where the atomic optimization comprises a bounding box (col. 4, line 24, literally bounding "sphere").

Referring to claim 11, Hopcroft discloses where the atomic optimization comprises a flatten hierarchy (col. 11, line 14).

Referring to claim 12, Hopcroft discloses where the atomic optimization comprises a generate macro texture (col. 10, line 45).

Referring to claim 13, Hopcroft discloses where the atomic optimization comprises a normalize texture coordinates (col. 10, line 45).

Referring to claim 14, Hopcroft discloses where the atomic optimization comprises a promote attribute (col. 10, line 45).

Referring to claim 15, Hopcroft discloses where the atomic optimization comprises a remove attribute (col. 10, line 45).

Referring to claim 16, Hopcroft discloses where the atomic optimization comprises a resize image (col. 6, lines 16-20, where the "geosets" are sections of an object).

Referring to claim 17, Hopcroft discloses where the atomic optimization comprises a shared attributes (col. 8, line 25).

Referring to claim 18, Hopcroft discloses where the atomic optimization comprises a spatial partition (col. 11, line 8).

Referring to claim 19, Hopcroft discloses where the atomic optimization comprises a strip triangles (col. 5, line 42 and see also the rejection to claim 16 above).

Referring to claim 21, the remarks presented above with respect to claim 6 apply equally to this claim.

Referring to claim 22, Hopcroft discloses a method of optimization of a screen graph comprising receiving an input scene graph (col. 2, line 45), creating an optimization process (col. 2, line 58) and optimizing the scene graph in order to increase efficiency of data manipulation, inter alia (col. 2, line 59).

Referring to claim 23, the remarks presented above with respect to claim 1 apply equally to this claim.

Referring to claims 24-37 and 39, the remarks presented above with respect to claims 6-19 and 21, respectively, apply equally to this claim.

Referring to claim 40, Hopcroft further discloses the step of performing post-optimization processing (e.g. display, col. 4, line 46).

Referring to claim 42, Hopcroft discloses outputting an optimized scene graph (col. 11, line 6).

Referring to claim 43, Hopcroft discloses computer code (col. 3, line 59) for implementing the invention described in claim 22 above.

Referring to claim 44, the remarks presented above with respect to claim 23 apply equally to this claim.

Referring to claims 45-58 and 60, the remarks presented above with respect to claims 6-19 and 21, respectively, apply equally to this claim.

Referring to claim 61, the remarks presented above with respect to claim 40 apply equally to this claim.

Referring to claim 63, the remarks presented above with respect to claim 42 apply equally to this claim.

3. Claims 20, 38 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hopcroft as applied to claims 1, 23 and 44 above, and further in view of Sowizral, Pub. No. US2002/0063704 A1. Referring to claim 20, Hopcroft does not disclose where one of the atomic optimization comprises a transform alpha optimization. Sowizral discloses where one of the

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rendering attributes is an alpha test operation (paragraph 234, line 9). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to rescale alpha values. One of ordinary skill in the art would have been motivated to do this to increase flexibility in the rendering of images.

Referring to claim 38, the remarks presented above with respect to claim 20 apply equally to this claim.

Referring to claim 59, the remarks presented above with respect to claim 20 apply equally to this claim.

Allowable Subject Matter

4. Claims 41 and 62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is an examiner's statement of reasons for allowance: The prior art does not anticipate, nor does it suggest, the system as claimed in claims 41 and 62. The prior art of record does not disclose performing validity checks on the optimized scene graph or creating statistics based on the optimization process.

The above indicated limitations, particularly in combination with the other limitations in the respective claims are not anticipated or suggested by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Adam Arnold** whose telephone number is **703-305-8413**. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso, can be reached at (703) 305-3885.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

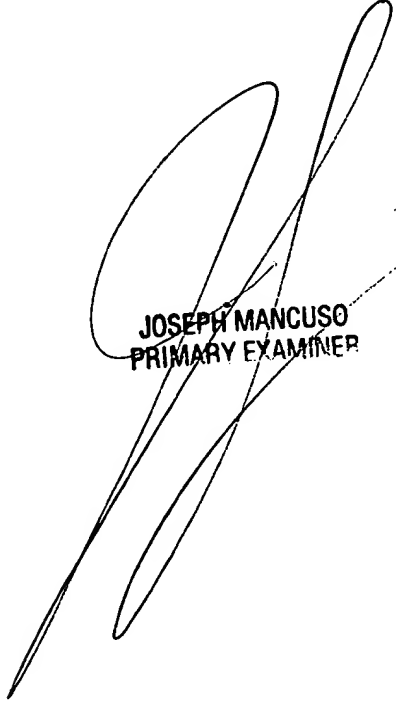
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



JOSEPH MANCUSO
PRIMARY EXAMINER